PB-240 339

SACANDAGA RESERVOIR, FULTON AND SARATOGA COUNTIES, NEW YORK

Pacific Northwest Environmental Research Laboratory

Prepared for:

National Environmental Research Center
New York National Guard
New York State Department of Environmental Conservation

November 1974

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16. ABSTRACT
Annual total phosphorus and total nitrogen loadings to the lake were estimated and subdivided according to either point or non-point source origin. An assessment of the lake's trophic condition and limiting nutrient is also provided. All data collected by the U.S.E.P.A. National Eutrophication Survey during the one year study of the lake and its tributaries are included in the report.

17. KEY WORDS AND DOCUMENT ANALYSIS

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REPORT

ON

SACANDAGA RESERVOIR

FULTON AND SARATOGA COUNTIES

NEW YORK

EPA REGION II

WORKING PAPER No. 167

WITH THE COOPERATION OF THE

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

AND THE

NEW YORK NATIONAL GUARD

NOVEMBER, 1974

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FOREWORD

The National Eutrophication Survey was initiated in 1972 in response to an Administration commitment to investigate the nationwide threat of accelerated eutrophication to fresh water lakes and reservoirs.

OBJECTIVES

The Survey was designed to develop, in conjunction with state environmental agencies, information on nutrient sources, concentrations, and impact on selected freshwater lakes as a basis for formulating comprehensive and coordinated national, regional, and state management practices relating to point-source discharge reduction and non-point source pollution abatement in lake watersheds.

ANALYTIC APPROACH

The mathematical and statistical procedures selected for the Survey's eutrophication analysis are based on related concepts that:

a. A generalized representation or model relating sources, concentrations, and impacts can be constructed.

b. By applying measurements of relevant parameters associated with lake degradation, the generalized model can be transformed into an operational representation of a lake, its drainage basin, and related nutrients.

c. With such a transformation, an assessment of the potential for eutrophication control can be made.

LAKE ANALYSIS

In this report, the first stage of evaluation of lake and watershed data collected from the study lake and its drainage basin is documented. The report is formatted to provide state environmental agencies with specific information for basin planning [§303(e)], water quality criteria/standards review [§303(c)], clean lakes [§314(a,b)], and water quality monitoring [§106 and §305(b)] activities mandated by the Federal Water Pollution Control Act Amendments of 1972.

Beyond the single lake analysis, broader based correlations between nutrient concentrations (and loading) and trophic condition are being made to advance the rationale and data base for refinement of nutrient water quality criteria for the Nation's fresh water lakes. Likewise, multivariate evaluations for the relationships between land use, nutrient export, and trophic condition, by lake class or use, are being developed to assist in the formulation of planning guidelines and policies by EPA and to augment plans implementation by the states.

ACKNOWLEDGMENT

The staff of the National Eutrophication Survey (Office of Research & Development, U. S. Environmental Protection Agency) expresses sincere appreciation to the New York Department of Environmental Conservation for professional involvement and to the New York National Guard for conducting the tributary sampling phase of the Survey.

Henry L. Diamond, Commissioner of the New York Department of Environmental Conservation, and Leo J. Hetling, Director, and Italo G. Carcich, Senior Sanitary Engineer, Environmental Quality Research, Department of Environmental Conservation, provided invaluable lake documentation and counsel during the Survey.

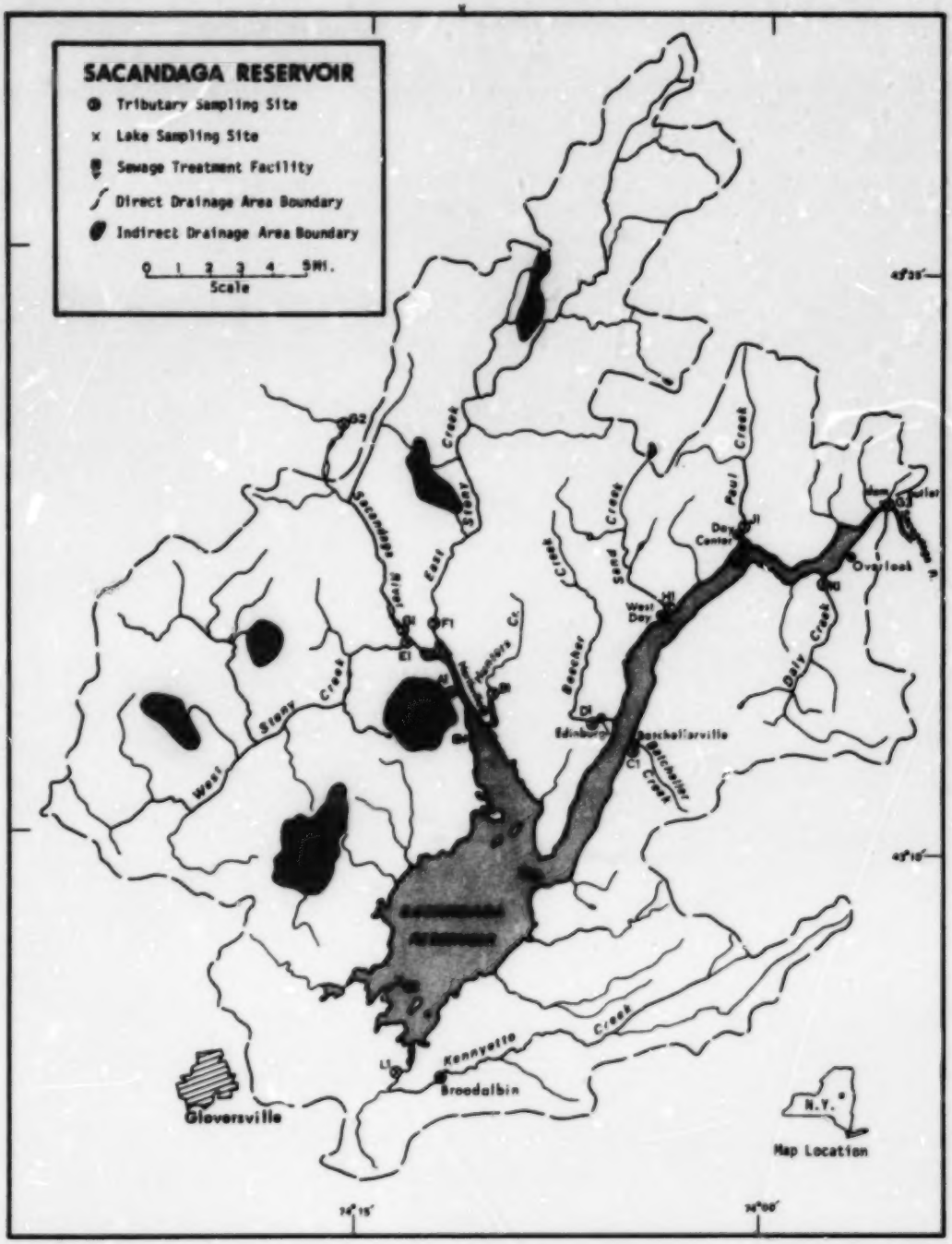
Major General John C. Baker, the Adjutant General of New York, and Project Officer Lieutenant Colonel Fred Peters, who directed the volunteer efforts of the New York National Guardsmen, are also gratefully acknowledged for their assistance to the Survey.

NATIONAL EUTROPHICATION SURVEY

STUDY LAKES

STATE OF NEW YORK

LAKE NAME	COUNTY
Allegheny Reservoir	Cattaraugas, NY; McLean, Warren, PA
Black	St. Lawrence
Canandaigua	Ontario
Cannonsville	Delaware
Carry Falls	St. Lawrence
Cassadaga	Chautauqua
Cayuga	Seneca, Tompkins
Champlain	Clinton, Essex, NY; Addison, Chittenden, Franklin, VT
Chautauqua	Chautauqua
Conesus	Livingston
Cross	Cayuga, Onondaga
Goodyear	Otsego
Huntington	Sullivan
Keuka	Ontario
Long	Hamilton
Lower St. Regis	Franklin
Otter	Cayuga
Owasco	Cayuga
Raquette Pond	Franklin
Round	Saratoga
Sacandaga Res.	Fulton, Saratoga
Saratoga	Saratoga
Schroon	Essex, Warren
Seneca	Seneca, Schyler, Yates
Swan	Sullivan
Swinging Bridge Res.	Sullivan


SACANDAGA RESERVOIR
Tributary Sampling Site
Lake Sampling Site
Sewage Treatment Facility
Direct Drainage Area Boundary
Indirect Drainage Area Boundary
0 1 2 3 4 5MI.
Scale
Stony Creek
Sacandaga River
East
Sand Creek
Paul Creek
Dog Corner
Overlook
West Day
Beecher
Opis Creek
Edinburg
Batchellerville
Batchellerville Creek
West
Stony Creek
Kennyetto Creek
Broadalbin
Gloversville
N.Y.
Map Location
43°25'
43°15'
74°15'
74°00'

SACANDAGA RESERVOIR

STORET NO. 3632

I. CONCLUSIONS

A. Trophic Condition:

Survey data show that Sacandaga Reservoir is mesotrophic. Of the 26 New York lakes sampled in the fall of 1972, when all were essentially well-mixed, three had less mean total phosphorus, seven had less mean inorganic nitrogen, and one had less mean dissolved phosphorus. For all data, five of the New York lakes had less mean chlorophyll a, and only four had greater Secchi disc transparency.

Survey limnologists noted that the water was very clear on all sampling occasions, and no algal blooms were observed.

B. Rate-Limiting Nutrient:

There was a significant loss in nutrients between the time the sample was collected and the assay was begun; therefore, the results are considered unreliable. However, the low level of mean dissolved phosphorus observed (0.004 mg/l) indicates that the potential primary productivity would have been low at that time.

The lake data indicate that phosphorus was the limiting nutrient at the time the assay was collected as well as the other sampling dates (all N/P ratios were greater than 39/1, and phosphorus limitation would be expected).

C. Nutrient Controllability:

1. Point sources--During the sampling year, Sacandaga Reservoir received a total phosphorus load at a rate less than that proposed by Vollenweider (in press) as "permissible", i.e., an oligotrophic rate (see page 13). The contribution from point sources was about 3% of the total load.

Phosphorus removal at the point sources would not be expected to appreciably change the trophic condition of the reservoir, but would provide additional protection for the existing trophic condition.

2. Non-point sources--During the sampling year, the mean total annual non-point phosphorus export was greatest from the Sacandaga River; however, the export rate of this river was less than other streams sampled (see page 13). The phosphorus export rate (156 lbs/mi^2/yr) and the export N/P ratio (28/1) of the Kennyetto Creek may be indicative of a point source(s) or cultural practices that result in nutrient inputs to this drainage.

II. LAKE AND DRAINAGE BASIN CHARACTERISTICS

A. Lake Morphometry†:

1. Surface area: 30,146 acres.
2. Mean depth: 24.9 feet.
3. Maximum depth: 50.2 feet.
4. Volume: 750,635 acre/feet.
5. Mean hydraulic retention time: 166 days.

B. Tributary and Outlet:
(See Appendix A for flow data)

1. Tributaries -

Name	Drainage area*	Mean flow*
Sacandaga River	525.0 mi^2	1,149.4 cfs
Unnamed Creek (A-1)	4.1 mi^2	9.0 cfs
Hunters Creek	6.6 mi^2	14.4 cfs
Batcheller Creek	6.8 mi^2	14.8 cfs
Beecher Creek	11.5 mi^2	25.2 cfs
West Stony Brook	88.0 mi^2	192.6 cfs
East Stoney Brook	95.4 mi^2	208.8 cfs
Sand Creek	16.1 mi^2	35.3 cfs
Paul Creek	20.5 mi^2	44.9 cfs
Daly Creek	27.2 mi^2	59.6 cfs
Kenyetto Creek	36.8 mi^2	80.5 cfs
Minor tributaries & immediate drainage -	158.9 mi^2	451.4 cfs
Totals	996.9 mi^2	2,285.9 cfs

2. Outlet -

Sacandaga River	1,044.0 mi^2**	2,285.9 cfs

† Wood, 1974.
* Drainage areas are accurate within ±5%, except for small basins (±10%); mean daily flows are accurate within ±5 and 25%; and normalized mean monthly flows are accurate within ±15%.
** Includes area of lake.

C. Precipitation*:

1. Year of sampling: 46.2 inches.

2. Mean annual: 41.9 inches.

* See Working Paper No. 1, "Survey Methods".

III. LAKE WATER QUALITY SUMMARY

Sacandaga Reservoir was sampled three times during the open-water season of 1972 by means of a pontoon-equipped Huey helicopter. Each time, samples for physical and chemical parameters were collected from three stations on the lake and from a number of depths at each station (see map, page v). During each visit, a single depth-integrated (15 feet to surface) sample was composited from the three stations for phytoplankton identification and enumeration; and during the last visit, a single five-gallon depth-integrated sample was composited for algal assays. Also each time, a depth-integrated sample was collected from each of the stations for chlorophyll a analysis. The maximum depths sampled were 31 feet at station 1, 35 feet at station 2, and 36 feet at station 3.

The results obtained are presented in full in Appendix B, and the data for the fall sampling period, when the lake was essentially well-mixed, are summarized below. Note, however, the Secchi disc summary is based on all values.

For differences in the various parameters at the other sampling times, refer to Appendix B.

A. Physical and chemical characteristics:

FALL VALUES

(10/10/72)

Parameter	Minimum	Mean	Median	Maximum
Temperature (Cent.)	12.9	14.2	14.0	15.2
Dissolved oxygen (mg/l)	8.6	9.0	9.2	9.4
Conductivity (μmhos)	50	50	50	50
pH (units)	6.9	7.0	7.0	7.2
Alkalinity (mg/l)	10	10	10	12
Total P (mg/l)	0.007	0.009	0.009	0.012
Dissolved P (mg/l)	0.002	0.004	0.004	0.007
NO_2 + NO_3 (mg/l)	0.080	0.106	0.110	0.130
Ammonia (mg/l)	0.030	0.069	0.050	0.120
		ALL VALUES		
Secchi disc (inches)	114	139	139	196

B. Biological characteristics:

1. Phytoplankton -

Sampling Date	Dominant Genera	Number per ml
05/18/72	1. Dinobryon	1,212
	2. Flagellates	624
	3. Phacus	325
	4. Cryptomonas	27
	5. Synedra	18
	Other genera	100
	Total	2,306
07/31/72	1. Lyngbya	2,711
	2. Fragilaria	1,265
	3. Dinobryon	1,175
	4. Polycystis	994
	5. Peridinium	120
	Other genera	241
	Total	6,506
10/10/72	1. Stichococcus	2,211
	2. Dinobryon	829
	3. Flagellates	502
	4. Fragilaria	402
	5. Anabaena	327
	Other genera	1,809
	Total	6,080

2. Chlorophyll a -
(Because of instrumentation problems during the 1972 sampling, the following values may be in error by plus or minus 20 percent.)

Sampling Date	Station Number	Chlorophyll a (µg/l)
05/18/72	01	3.0
	02	1.6
07/31/72	01	4.6
	02	8.1
	03	1.9
10/10/72	01	7.2
	02	7.0
	03	5.4

C. Limiting Nutrient Study:

There was a significant loss in nutrients in the assay sample from the time the sample was collected and the beginning of the assay; therefore, the results are considered unreliable. However, the low level of mean dissolved phosphorus measured in the reservoir in October (0.004 mg/l) indicates that the potential primary productivity would have been low at that time.

The lake data indicate that phosphorus was the limiting nutrient at the time the assay sample was collected as well as the other sampling dates (N/P ratios were greater than 39/1, and phosphorus limitation would be expected).

IV. NUTRIENT LOADINGS
(See Appendix C for data)

For the determination of nutrient loadings, the New York National Guard collected monthly near-surface grab samples from each of the tributary sites indicated on the map (page v), except for the high runoff months of April and May when two samples were collected. Sampling was begun in November, 1972, and was completed in October, 1972.

Through an interagency agreement, stream flow estimates for the year of sampling and a "normalized" or average year were provided by the New York District Office of the U.S. Geological Survey for the tributary sites nearest the lake.

In this report, nutrient loads for sampled tributaries were determined by using a modification of a U.S. Geological Survey computer program for calculating stream loadings*. Nutrient loadings for unsampled "minor tributaries and immediate drainage" ("ZZ" of U.S.G.S.) were estimated by using the means of the nutrient loads, in lbs/mi^2/year, at stations C-1, D-1, E-1, H-1, and K-1 and multiplying the means by the ZZ area in mi^2.

Nutrient loads from Sacandaga Park were estimated at 2.5 lbs P and 7.5 lbs N/capita/year.

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* See Working Paper No. 1.

A. Waste Sources:

1. Known municipal -

Name	Pop. Served*	Treatment	Mean Flow (mgd)	Receiving Water
Sacandaga Park	500	Imhoff tank	0.050**	Sacandaga Reservoir

2. Known industrial - None

* Anonymous, 1971.
** Estimated at 100 gal/capita/day.

B. Annual Total Phosphorus Loading - Average Year:

1. Inputs -

Source	lbs P/ yr	% of total
a. Tributaries (non-point load) -		
Sacandaga River	17,750	36.8
Unnamed Creek (A-1)	160	0.3
Hunters Creek	410	0.9
Batcheller Creek	330	0.7
Beecher Creek	460	1.0
West Stoney Brook	3,470	7.2
East Stoney Brook	4,870	10.1
Sand Creek	590	1.2
Paul Creek	800	1.7
Daly Creek	980	2.0
Kennyetto Creek	5,740	11.9
b. Minor tributaries & immediate drainage (non-point load) -	6,390	13.2
c. Known municipal -		
Sacandaga Park	1,250	2.6
d. Septic tanks* -	330	0.7
e. Known industrial - None	-	-
f. Direct precipitation** -	4,700	9.7
Total	48,230	100.0

2. Outputs -

Lake outlet - Sacandaga River 35,450

3. Net annual P accumulation - 12,780 pounds

* Estimate based on 526 shoreline dwellings; see Working Paper No. 1.
** See Working Paper No. 1.

C. Annual Total Nitrogen Loading - Average Year:

1. Inputs -

Source	lbs N/ yr	% of total
a. Tributaries (non-point load) -		
Sacandaga River	1,818,100	48.8
Unnamed Creek (A-1)	9,100	0.3
Hunters Creek	14,500	0.4
Batcheller Creek	24,140	0.6
Beecher Creek	42,900	1.2
West Stoney Brook	293,880	7.9
East Stoney Brook	291,570	7.8
Sand Creek	55,800	1.5
Paul Creek	85,040	2.3
Daly Creek	79,580	2.1
Kennyetto Creek	165,100	4.4
b. Minor tributaries & immediate drainage (non-point load) -	540,640	14.5
c. Known municipal -		
Sacandaga Park	3,750	0.1
d. Septic tanks* -	12,360	0.3
e. Known industrial - None	-	-
f. Direct precipitation** -	290,430	7.8
Total	3,726,890	100.0

2. Outputs -

Lake outlet - Sacandaga River 3,840,480

3. Net annual N loss - 113,590 pounds

* Estimate based on 526 shoreline dwellings; see Working Paper No. 1.
** See Working Paper No. 1.

D. Mean Annual Non-point Nutrient Export by Subdrainage Area:

Tributary	lbs $P/mi^2/yr$	lbs $N/mi^2/yr$
Sacandaga River	34	3,463
Unnamed Creek (A-1)	39	2,219
Hunters Creek	62	2,197
Batcheller Creek	49	3,550
Beecher Creek	40	3,730
West Stoney Brook	39	3,340
East Stoney Brook	51	3,056
Sand Creek	37	3,466
Paul Creek	39	4,148
Daly Creek	36	2,926
Kennyetto Creek	156	4,486

E. Yearly Loading Rates:

In the following table, the existing phosphorus loading rates are compared to those proposed by Vollenweider (in press). Essentially, his "dangerous" rate is the rate at which the receiving waters would become eutrophic or remain eutrophic; his "permissible" rate is that which would result in the receiving water remaining oligotrophic or becoming oligotrophic if morphometry permitted. A mesotrophic rate would be considered one between "dangerous" and "permissible".

	Total Phosphorus		Total Nitrogen	
Units	Total	Accumulated	Total	Accumulated
lbs/acre/yr	1.6	0.4	123.6	loss*
grams/m^2/yr	0.18	0.04	13.9	-

Vollenweider loading rates for phosphorus ($g/m^2/yr$) based on mean depth and mean hydraulic retention time of Sacandaga Reservoir:

"Dangerous" (eutrophic rate)	0.80
"Permissible" (oligotrophic rate)	0.40

* There was an apparent loss of nitrogen during the sampling year. This may have been due to nitrogen fixation in the lake, solubilization of previously sedimented nitrogen, recharge with nitrogen-rich ground water, unknown and unsampled point sources discharging directly to the lake, or underestimation of the nitrogen loads from Sacandaga Park. Whatever the cause, a similar nitrogen loss has occurred at Shagawa Lake, Minnesota, which has been intensively studied by EPA's National Eutrophication Research and Lake Restoration Branch.

V. LITERATURE REVIEWED

Anonymous, 1971. Inventory of municipal waste facilities. Publ. No. OWP-1, Vol. 2, EPA, Washington, D.C.

Vollenweider, Richard A., (in press). Input-output models. Schweiz. A. Hydrol.

Wood, Lindsey W., 1974. Personal communication (morphometry data). NY Dept. of Health, Albany.

VII. APPENDICES

APPENDIX A

TRIBUTARY FLOW DATA

TRIBUTARY FLOW INFORMATION FOR NEW YORK 11/26/74

LAKE CODE 3632 GREAT SACANDAGA LAKE

TOTAL DRAINAGE AREA OF LAKE 1044.00

TRIBUTARY	SUB-DRAINAGE AREA	NORMALIZED FLOWS JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN
3632A1	4.10	7.05	5.81	13.10	30.70	14.40	6.88	3.60	2.81	2.78	5.26	8.82	8.21	8.98
3632B1	6.60	11.30	9.36	21.00	49.50	23.10	9.79	5.80	3.23	4.48	8.47	14.20	13.20	14.44
3632C1	6.77	11.60	9.60	21.60	50.80	23.70	10.00	5.95	3.32	4.60	8.69	14.60	13.60	14.82
3632D1	11.50	19.80	16.30	36.60	84.20	40.30	17.10	10.10	5.63	7.81	14.80	24.70	23.00	25.17
3632E1	88.00	151.00	125.00	280.00	660.00	308.00	131.00	77.40	43.10	59.80	113.00	189.00	176.90	192.60
3632F1	95.40	164.00	135.00	304.00	715.00	334.00	142.00	83.80	46.70	64.80	122.00	205.00	191.00	208.75
3632G1	525.00	903.00	745.00	1670.00	3940.00	1840.00	779.00	461.00	257.00	357.00	674.00	1130.00	1050.00	1149.44
3632G3	1044.00	1790.00	1480.00	3330.00	7830.00	3660.00	1550.00	917.00	511.00	709.00	1340.00	2250.00	2090.00	2285.99
3632H1	16.10	27.70	22.80	51.30	121.00	56.40	23.90	14.20	7.88	10.90	20.70	34.60	32.20	35.27
3632J1	20.50	35.20	29.10	65.30	154.00	71.80	30.40	18.00	10.00	13.90	26.30	44.10	41.10	44.89
3632K1	27.20	46.80	38.60	86.60	204.00	95.30	40.40	23.90	13.30	18.50	34.90	58.50	54.50	59.55
3632L1	36.80	63.30	52.20	117.00	276.00	129.00	54.60	32.30	18.00	25.00	47.20	79.20	73.70	80.55
3632ZZ	206.03	354.00	292.00	656.00	1550.00	722.00	306.00	181.00	101.00	140.00	264.00	443.00	413.00	451.42

SUMMARY

TOTAL DRAINAGE AREA OF LAKE = 1044.00
SUM OF SUB-DRAINAGE AREAS = 1044.00

TOTAL FLOW IN = 27455.75
TOTAL FLOW OUT = 27457.00

MEAN MONTHLY FLOWS AND DAILY FLOWS

TRIBUTARY	MONTH	YEAR	MEAN FLOW	DAY	FLOW	DAY	FLOW	DAY	FLOW
3632A1	11	72	18.20	5	9.05				
	12	72	10.20	3	7.22				
	1	73	14.70	6	9.05				
	2	73	9.68	3	21.40				
	3	73	25.40	3	2.60				
	4	73	25.40	7	20.60	21	12.00		
	5	73	19.10	6	5.65	20	26.30		
	6	73	6.52	2	7.20				
	7	73	3.29	7	2.35				
	8	73	1.23	4	1.75				
	9	73	2.27	8	1.66				
	10	73	2.16	6	1.68				
3632H1	11	72	29.20	5	10.80				
	12	72	16.40	3	8.58				
	1	73	23.50	6	10.40				
	2	73	15.60	3	23.40				
	3	73	41.30	3	3.06				
	4	73	41.00	7	20.00	21	16.80		
	5	73	30.60	6	8.00	20	32.50		
	6	73	10.50	2	7.40				
	7	73	5.30	7	0.76				
	8	73	1.97	4	1.55				
	9	73	3.66	8	1.30				
	10	73	3.48	6	1.48				

TRIBUTARY FLOW INFORMATION FOR NEW YORK 11/26/74

LAKE CODE 3632 GREAT SACANDAGA LAKE

MEAN MONTHLY FLOWS AND DAILY FLOWS

TRIBUTARY	MONTH	YEAR	MEAN FLOW	DAY	FLOW	DAY	FLOW	DAY	FLOW
3632C1	11	72	30.00	5	25.50				
	12	72	16.90	3	20.30				
	1	73	24.10	5	31.30				
	2	73	16.00	2	16.00				
	3	73	42.50	6	17.20				
	4	73	42.00	10	27.20	16	18.40		
	5	73	31.40	6	12.00	12	25.00		
	6	73	10.70	2	14.40				
	7	73	5.44	2	13.20				
	8	73	2.02	7	2.50				
	9	73	3.76	25	5.26				
	10	73	3.97	6	3.90				
3632D1	11	72	50.40	5	56.90				
	12	72	28.50	3	45.40				
	1	73	41.20	5	694.00				
	2	73	27.20	2	35.50				
	3	73	72.10	6	38.00				
	4	73	71.30	10	40.00	16	27.60		
	5	73	53.40	6	17.40	12	37.40		
	6	73	18.30	2	21.20				
	7	73	9.23	2	19.60				
	8	73	3.43	7	4.20				
	9	73	6.39	25	7.30				
	10	73	6.08	6	5.30				
3632E1	11	72	389.00	5	278.00				
	12	72	218.00	3	222.00				
	1	73	314.00	6	278.00				
	2	73	208.00	3	658.00				
	3	73	551.00	3	80.00				
	4	73	546.00	7	518.00	21	360.00		
	5	73	408.00	6	198.00	20	604.00		
	6	73	140.00	2	243.00				
	7	73	70.70	7	74.00				
	8	73	26.30	4	47.50				
	9	73	48.90	8	37.50				
	10	73	46.40	6	45.00				
3632F1	11	72	422.00	5	224.00				
	12	72	237.00	3	178.00				
	1	73	341.00	6	224.00				
	2	73	225.00	3	532.00				
	3	73	598.00	1	65.00				
	4	73	592.00	7	542.00	21	350.00		
	5	73	443.00	6	173.00	20	675.00		
	6	73	152.00	2	197.00				
	7	73	76.69	7	50.00				
	8	73	28.50	4	46.00				
	9	73	53.00	8	41.00				
	10	73	50.10	6	44.50				

51

TRIBUTARY FLOW INFORMATION FOR NEW YORK 11/26/74

LAKE CODE 3632 GREAT SACANDAGA LAKE

MEAN MONTHLY FLOWS AND DAILY FLOWS

TRIBUTARY	MONTH	YEAR	MEAN FLOW	DAY	FLOW	DAY	FLOW	DAY	FLOW
3632G1	11	72	2330.00	5	1740.00				
	12	72	1300.00	3	1390.00				
	1	73	1880.00	6	1740.00				
	2	73	240.00	3	4130.00				
	3	73	3290.00	3	496.00				
	4	73	3260.00	7	3880.00	21	2450.00		
	5	73	2440.00	6	1220.00	20	4790.00		
	6	73	835.00	2	1540.00				
	7	73	421.00	7	454.00				
	7	73	421.00	7	454.00				
	8	73	157.00	4	321.00				
	9	73	292.00	8	274.00				
	10	73	277.00	6	307.00				
3632G3	11	72	4630.00	5	48.00				
	12	72	2590.00	3	3040.00				
	1	73	3720.00	5	4110.00				
	2	73	2470.00	2	5000.00				
	3	73	6560.00	6	4580.00				
	4	73	6480.00	10	5480.00	16	4080.00		
	5	73	4850.00	6	127.00	12	2010.00		
	6	73	1660.00	2	4070.00				
	7	73	838.00	2	2480.00				
	7	73	838.00	2	2480.00				
	8	73	312.00	7	2550.00				
	9	73	580.00	25	2100.00				
	10	73	550.00	6	2060.00				
3632H1	11	72	71.20	5	80.00				
	12	72	39.90	3	64.00				
	1	73	57.60	5	98.00				
	2	73	38.00	2	54.50				
	3	73	101.00	6	53.50				
	4	73	100.00	10	68.00	16	46.40		
	5	73	74.80	6	29.20	12	63.00		
	6	73	25.60	2	26.00				
	7	73	13.00	2	33.00				
	7	73	13.00	2	33.00				
	8	73	4.81	7	4.20				
	9	73	8.91	25	11.00				
	10	73	8.50	6	7.50				
3632J1	11	72	90.80	5	136.00				
	12	72	51.00	3	108.00				
	1	73	73.20	5	167.00				
	2	73	48.50	2	93.00				
	3	73	129.00	6	92.00				
	4	73	127.00	10	80.00	16	50.40		
	5	73	95.20	6	30.00	12	72.00		
	6	73	32.60	2	37.40				
	7	73	16.40	2	33.50				
	7	73	16.40	2	33.50				
	8	73	6.10	7	2.28				
	9	73	11.40	25	8.25				
	10	73	10.80	6	4.95				

TRIBUTARY FLOW INFORMATION FOR NEW YORK 11/26/74

LAKE CODE 3632 GREAT SACANDAGA LAKE

MEAN MONTHLY FLOWS AND DAILY FLOWS

TRIBUTARY	MONTH	YEAR	MEAN FLOW	DAY	FLOW	DAY	FLOW	DAY	FLOW
3632K1	11	72	120.00	5	178.00				
	12	72	67.60	3	143.00				
	1	73	97.30	5	218.00				
	2	73	64.30	2	122.00				
	3	73	170.00	6	120.00				
	4	73	169.00	10	126.00	16	83.00		
	5	73	126.00	6	50.00	12	114.00		
	6	73	43.30	2	64.00				
	7	73	21.80	2	59.00				
	7	73	21.80	2	59.00				
	8	73	8.11	7	4.90				
	9	73	15.10	25	18.00				
	10	73	14.30	6	11.50				
3632L1	11	72	163.00	5	106.00				
	12	72	91.40	3	80.40				
	1	73	132.00	5	123.00				
	2	73	87.00	3	238.00				
	3	73	230.00	3	2.90				
	4	73	228.00	7	107.00	21	74.00		
	5	73	171.00	6	46.00	20	130.00		
	6	73	58.50	2	49.00				
	7	73	29.50	7	17.60				
	7	73	29.50	7	17.60				
	8	73	11.00	4	13.20				
	9	73	20.40	8	11.60				
	10	73	19.40	6	12.80				
3632ZZ	11	72	912.00	5	684.00				
	12	72	512.00	3	545.00				
	1	73	736.00	5	759.00				
	2	73	487.00	3	1040.00				
	3	73	1290.00	3	326.00				
	4	73	1280.00	10	1140.00	21	961.00		
	5	73	957.00	6	478.00				
	6	73	328.00	2	604.00				
	7	73	165.00	2	554.00				
	7	73	165.00	2	554.00				
	8	73	61.60	7	65.90				
	9	73	114.00	25	179.00				
	10	73	108.00	6	120.00				

APPENDIX B

PHYSICAL and CHEMICAL DATA

STORET RETRIEVAL DATE 74/11/26

363201
43 09 00.0 074 09 00.0
SACANDAGA RESERVOIR
36 NEW YORK

11EPALES 2111202
5 0035 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00010 WATER TEMP CENT	00300 DO MG/L	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00400 PH SU	00410 T ALK CACO3 MG/L	00630 NO2&NO3 N-TOTAL MG/L	00610 NH3-N TOTAL MG/L	00665 PHOS-TOT MG/L P	00666 PHOS-DIS MG/L P
72/05/18	10	20 0000	12.7	9.6	196	50	6.70	10K	0.430	0.060	0.013	0.006
	10	20 0010	7.5	11.7		50	6.20	10K	0.450	0.020	0.010	0.006
	10	20 0030	7.1	9.4		50	6.30	10K	0.470	0.030	0.009	0.005
72/07/31	08	45 0000			144	50K	6.60	10K	0.210	0.070	0.011	0.005
	08	45 0004	23.2	7.6		48	6.60	10K	0.210	0.070	0.007	0.006
	08	45 0015	22.6	7.6		45	6.40	10K	0.200	0.070	0.015	0.012
	08	45 0022	18.2	5.0		40	6.10	10K	0.220	0.110	0.010	0.007
	08	45 0030	15.9	2.8		43	6.00	10K	0.200	0.150	0.016	0.006
72/10/10	15	00 0000			120	50K	7.05	10K	0.090	0.050	0.009	0.004
	15	00 0004	13.8	9.2		50K	7.10	10K	0.090	0.050	0.007	0.004
	15	00 0015	13.3	9.4		50K	7.05	10K	0.110	0.080	0.012	0.003
	15	00 0022	13.2	9.2		50K	7.05	10K	0.100	0.050	0.008	0.004
	15	00 0031	12.9	9.2		50K	7.00	10	0.120	0.050	0.007	0.006

DATE FROM TO	TIME OF DAY	DEPTH FEET	32217 CHLRPHYL A UG/L
72/05/18	10	20 0000	3.0J
72/07/31	08	45 0000	4.6J
72/10/10	15	00 0000	7.2J

K VALUE KNOWN TO BE LESS THAN INDICATED

J VALUE KNOWN TO BE IN ERROR

STORET RETRIEVAL DATE 74/11/26

363202
43 06 00.0 074 13 30.0
SACANDAGA RESERVOIR
36 NEW YORK

11EPALES 2111202
4 0042 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00010 WATER TEMP CENT	00300 DO MG/L	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00400 PH SU	00410 T ALK CACO3 MG/L	00630 NO2&NO3 N-TOTAL MG/L	00610 NH3-N TOTAL MG/L	00665 PHOS-TOT MG/L P	00666 PHOS-DIS MG/L P
72/05/18	10 47	0000	13.4	10.0	139	50	6.90	10K	0.400	0.030	0.009	0.005
	10 47	0010	9.6	11.5		50	6.60	10K	0.450	0.030	0.009	0.004
	10 47	0035	7.1	10.2		50	6.20	10K	0.500	0.050	0.008	0.003
72/07/28	11 50	0000			144							
	11 50	0027	16.3	3.0		50K	6.60	12	0.200	0.160	0.009	0.007
72/07/31	07 55	0000			132	50K	6.60	10	0.190	0.060	0.013	0.008
	07 55	0004	22.4	8.4		50K	6.50	10K	0.200	0.060	0.010	0.009
	07 55	0015	22.3	8.4		50K	6.50	10K	0.200	0.060	0.010	0.009
	07 55	0020	21.8	7.6		50K	6.50	10K	0.200	0.060	0.011	0.006
	07 55	0024	20.1	4.4		50K	6.40	20	0.200	0.190	0.021	0.012
72/10/10	14 30	0000			120	50K	7.20	11	0.080	0.040	0.009	0.004
	14 30	0004		8.6		50K	7.15	12	0.080	0.030	0.011	0.005
	14 30	0015	14.0	9.3		50K	7.10	10K	0.090	0.040	0.010	0.007

DATE FROM TO	TIME OF DAY	DEPTH FEET	32217 CHLRPHYL A UG/L
72/05/18	10 47	0000	1.6J
72/07/31	07 55	0000	8.1J
72/10/10	14 30	0000	7.0J

K VALUE KNOWN TO BE LESS THAN INDICATED

J VALUE KNOWN TO BE IN ERROR

STORET RETRIEVAL DATE 74/11/26

363203
43 20 00.0 074 00 00.0
SACANDAGA RESERVOIR
36035 NEW YORK

11EPALES
6

2111202
0036 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00010 WATER TEMP CENT	00300 DO MG/L	00077 TRANSP SECCHI INCHES	00094 CNDUCTVY FIELD MICROMHO	00400 PH SU	00410 T ALK CACO3 MG/L	00630 NO2&NO3 N-TOTAL MG/L	00610 NH3-N TOTAL MG/L	00665 PHOS-TOT MG/L P	00666 PHOS-DIS MG/L P
72/07/31	09	15 0000			144	50K	6.70	10K	0.210	0.060	0.010	0.007
	09	15 0004	24.4	7.2		50K	6.60	10K	0.210	0.060	0.008	0.005
	09	15 0015	23.8	7.6		50K	6.40	10K	0.220	0.070	0.007	0.005
	09	15 0025	17.0	2.8		50K	6.10	10K	0.240	0.130	0.009	0.007
	09	15 0036	13.9	4.6		50K	6.00	10K	0.260	0.180	0.011	0.010
72/10/10	15	35 0000			114	50K	7.10	10K	0.120	0.100	0.010	0.005
	15	35 0004	15.2	8.6		50K	7.00	10K	0.120	0.100	0.009	0.006
	15	35 0015	15.1	8.6		50K	6.95	10K	0.130	0.100	0.007	0.003
	15	35 0022	15.0	8.6		50K	6.95	10K	0.130	0.120	0.009	0.003
	15	35 0029	14.9	9.2		50K	6.95	10K	0.120	0.090	0.008	0.002

DATE FROM TO	TIME OF DAY	DEPTH FEET	32217 CHLRPHYL A UG/L
72/07/31	09	15 0000	1.9J
72/10/10	15	35 0000	5.4J

K VALUE KNOWN TO BE LESS THAN INDICATED

J VALUE KNOWN TO BE IN ERROR

APPENDIX C

TRIBUTARY DATA

STORET RETRIEVAL DATE 74/11/26

3632A1 LS3632A1
43 14 00.0 074 12 00.0
UNNAMED CREEK
36 7.5/NORTHVILLE
T/SACANDAGA RESERVOIR
GIFFORD VALLEY ROAD BRIDGE
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/11/05	14 05		0.034	0.300	0.060	0.005K	0.008
72/12/03	13 35		0.064	0.150	0.014	0.005K	0.005K
73/01/06	13 45		0.147	0.250	0.034	0.005K	0.005K
73/02/03	13 45		0.105		0.063	0.005K	0.005K
73/03/03	11 45		0.099	0.[illegible]	0.056	0.005K	0.005K
73/04/07	13 50		0.052	[illegible]	0.033	0.005K	0.015
73/04/21	13 35		0.021	0.[illegible]	0.027	0.005K	0.005K
73/05/06	12 30		0.042	0.540	0.039	0.005K	0.015
73/05/20	11 25		0.023	0.240	0.026	0.010	0.010
73/06/02	16 15		0.015	0.520	0.008	0.005K	0.010
73/07/07	10 15		0.033	0.230	0.018	0.005K	0.010
73/08/04	10 00		0.640	0.380	0.033	0.005K	0.015
73/09/08			0.410	1.470	0.252	0.006	0.085
73/10/04	13 15		0.029	0.400	0.063	0.005K	0.010

K VALUE KNOWN TO BE
LESS THAN INDICATED

STORET RETRIEVAL DATE 74/11/26

3432R1 L53632R1
43 14 00.0 074 10 00.0
HUNTERS CREEK
36 7.5/NORTHVILLE
T/SACANDAGA RESERVOIR
RIDGE RD NE OF NORTHVILLE
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/11/05	15 35		0.052	0.630	0.084	0.005K	0.008
72/12/03	15 00		0.083	0.100K	0.025	0.005K	0.006
73/01/06	14 40		0.094	0.140	0.028	0.005K	0.005K
73/02/03	14 45		0.099	0.150	0.028	0.005K	0.010
73/03/03	12 40		0.140	0.120	0.042	0.005K	0.015
73/04/07	15 05		0.044	0.500	0.010	0.005K	0.015
73/04/21	14 40		0.048	0.330	0.048	0.005K	0.010
73/05/06	14 00		0.065	1.050	0.054	0.005K	0.030
73/05/20	13 30		0.032	0.520	0.072	0.006	0.010
73/06/02	17 10		0.035	0.580	0.030	0.005K	0.010
73/07/07	11 30		0.042	0.440	0.026	0.005K	0.020
73/08/04	11 25		0.115	0.420	0.029	0.005K	0.020
73/09/08			0.154	0.920	0.120	0.009	0.035
73/10/06	12 00		0.033	0.310	0.040	0.005K	0.015

K VALUE KNOWN TO BE LESS THAN INDICATED

STORET RETRIEVAL DATE 74/11/26

3432C1 LS3432C1
43 12 30.0 074 05 00.0
HATCHELLER CREEK
36 7.5/EDINBURG
T/SACANDAGA RESERVOIR
MED DUTY RD BRIDGE NEAR HATCHELLERVILLE
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/11/05	11 03		0.076	0.150	0.050	0.005K	0.009
72/12/03	09 30		0.120	0.100K	0.006	0.005K	0.006
73/01/05	08 30		0.168	0.180	0.013	0.005K	0.005K
73/02/02	09 05		0.230	0.520	0.060	0.005K	0.015
73/03/06	08 14		0.260	0.200	0.038	0.005K	0.010
73/04/10	10 03		0.147	0.100K	0.021	0.005K	0.005K
73/04/16	09 00		0.132	2.500	0.070	0.005K	0.005K
73/05/06	10 20		0.074	0.420	0.034	0.006	0.015
73/05/12	19 10		0.054	2.300	0.063	0.008	0.020
73/06/02	09 26		0.230	0.460	0.105	0.005K	0.010
73/07/02	07 45		0.072	0.540	0.092	0.005K	0.020
73/08/07	09 40			3.360	0.740		0.005K
73/09/25	10 45		0.150	0.930	0.060	0.008	0.015
73/10/06			0.078	0.600	0.056	0.005K	0.020

K VALUE KNOWN TO BE LESS THAN INDICATED

STORET RETRIEVAL DATE 74/11/26

343201 LS343201
43 13 30.0 074 06 30.0
BEECHER CREEK
36 7.5/EDINBURG
T/SACANDAGA RESERVOIR
LIGHT DUTY ROAD BRIDGE IN EDINBURG
11EPALES 2111204
4 0060 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/11/05	10	07	0.088	0.210	0.046	0.005K	0.011
72/12/03	09	00	0.110	0.110	0.009	0.005K	0.006
73/01/05	08	10	0.136	0.280	0.023	0.005K	0.005K
73/02/02	09	25	0.140	0.520	0.044	0.005K	0.010
73/03/06	08	54	0.252	0.130	0.039	0.005K	0.005K
73/04/10			0.147	0.150	0.063	0.005K	0.005K
73/04/16	09	30	0.132	2.800	0.065	0.005K	0.010
73/05/06	10	10	0.074	1.400	0.052	0.009	0.025
73/05/12	19	25	0.046	1.760	0.050	0.005K	0.010
73/06/02	09	05	0.240	0.560	0.039	0.005K	0.015
73/07/02	07	00	0.250	0.460	0.154	0.005K	0.010
73/08/07	09	58	0.040	0.660	0.315	0.006	0.006
73/09/25	10	28	0.147	0.230	0.029		0.005K
73/10/06			0.074	0.640	0.050	0.005K	0.010

K VALUE KNOWN TO BE LESS THAN INDICATED

STORET RETRIEVAL DATE 74/11/26

3432E1 LS3632E1
43 15 00.0 074 13 30.0
WEST STONY CREEK
36 15/HARRISBURG
T/SACANDAGA RESERVOIR
BPDG AT CONFLUENCE WITH SA CANDAGA RIVER
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/11/05	14 30		0.234	0.210	0.054	0.005K	0.007
72/12/03	13 45		0.280	0.160	0.010	0.005K	0.007
73/01/06	13 50		0.357	0.360	0.017	0.005K	0.005K
73/02/03	14 40		0.490	0.800	0.095	0.006	0.015
73/03/03	12 00		0.315		0.021	0.005K	0.010
73/04/07	14 05		0.290	0.690	0.038	0.005K	0.010
73/04/21	13 45		0.260	0.300	0.040	0.009	0.010
73/05/06	12 45		0.140	0.960	0.032	0.005K	0.010
73/05/20	11 35		0.198	2.100	0.100	0.006	0.010
73/06/02	16 00		0.060	0.310	0.012	0.005K	0.005K
73/07/07	10 25		0.040	0.270	0.018	0.005K	0.010
73/08/04	10 10		0.115	0.325	0.006	0.005K	0.015
73/09/08			0.058	0.960	0.063	0.005K	0.010
73/10/04	13 00		0.014	0.280	0.034	0.005K	0.010

K VALUE KNOWN TO BE LESS THAN INDICATED

STORET RETRIEVAL DATE 74/11/26

3432F1 LS3632F1
43 16 00.0 074 12 30.0
EAST STONY CREEK
36 15/HARRISBURG
T/SACANDAGA RESERVOIR
ST HWY 30 BRIDGE
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO3+NO2 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/11/05	15 30		0.195	0.600	J.061	C.005K	0.008
72/12/03	14 40		0.260		0.024	0.005K	0.015
73/01/06	14 30		0.240	0.190	0.023	0.005K	0.024
73/02/03	14 30		0.420	1.600	0.147	0.021	0.040
73/03/03	12 35		0.290	0.100K	0.020	0.005K	0.015
73/04/07	14 40		0.230	0.860	0.020	0.005K	0.005K
73/04/21	14 25		0.160	0.400	0.082	0.005K	0.005K
73/05/06	13 45		0.105	1.470	0.025	0.005K	0.005K
73/05/20	13 00		0.154	0.330	0.016	0.005K	0.010
73/06/02	17 20		0.058	0.260	0.044	0.005K	0.005K
73/07/07	11 15		0.039	0.270	0.013	0.005K	0.010
73/08/04	11 05		0.073	0.290	0.010	0.005K	0.010
73/09/08			0.026	0.720	0.032	0.005K	0.010
73/10/06	13 15		0.013K	0.220	0.030	0.005K	0.010

K VALUE KNOWN TO BE LESS THAN INDICATED

STORET RETRIEVAL DATE 74/11/26

3632G1 LS3632G1
43 15 30.0 074 14 00.0
SACANDAGA RIVER
36 15/HARRISBURG
I/SACANDAGA RESERVOIR
HWY BRIDGE DOWNSTREAM OF N HAMPTON STP
11EPALFS 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/11/05	14 45		0.338	0.260	0.058	0.005K	0.008
72/12/03	13 55		0.430	0.330	0.019	0.005K	0.011
73/01/06	13 50		0.560	0.290	0.026	0.005K	0.005K
73/02/03	14 03		0.500	0.800	0.189	0.008	0.015
73/03/03	12 05		0.400	0.390	0.042	0.005K	0.010
73/04/07	14 07		0.450	0.350	0.010	0.005K	0.005K
73/04/21	13 50		0.430	0.400	0.018	0.005K	0.005K
73/05/06	12 55		0.300	1.100	0.069	0.005K	0.005K
73/05/20	11 50		0.380	3.400	0.115	0.005K	0.010
73/06/02	16 31		0.220	0.690	0.015	0.005K	0.005K
73/07/07	10 35		0.110	0.300	0.019	0.005K	0.010
73/08/04	10 20		0.110	0.330	0.017	0.005K	0.010
73/09/08			0.072	1.150	0.036	0.005K	0.010
73/10/06	12 10		0.046	0.300	0.032	0.005K	0.005K

K VALUE KNOWN TO BE LESS THAN INDICATED

STORET RETRIEVAL DATE 74/11/26

363262 LS3632L2
43 21 00.0 074 14 00.0
SACANDAGA RIVER
36 15/LAKE PLEASANT
T/SACANDAGA RESERVOIR
GAGING STA NEAR PUMPKIN HOLLOW
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/11/05	15 40		0.340	0.220	0.050	0.005K	0.010
72/12/03	14 05		0.420	0.270	0.017	0.005K	0.005K
73/01/06	14 00		0.530	0.330	0.017	0.005K	0.005K
73/02/03	14 15		0.490	0.230	0.020	0.005K	0.010
73/03/03	12 20		0.390	0.740	0.110	0.005K	0.005K
73/04/07	14 35		0.420	0.610	0.063	0.005K	0.010
73/04/21	14 05		0.390	0.335	0.012	0.005K	0.005K
73/05/06	13 15		0.237	0.450	0.031	0.005K	0.005K
73/05/20	12 10		0.340	0.970	0.046	0.005K	0.010
73/06/02	17 00		0.220	0.850	0.031	0.005K	0.010
73/07/07	11 00		0.100	0.390	0.023	0.005K	0.015
73/08/04	10 40		0.105	0.240	0.005K	0.005K	0.010
73/09/08			0.052	0.550	0.037	0.005K	0.010
73/10/06	12 30		0.096	0.350	0.032	0.005K	0.010

K VALUE KNOWN TO BE LESS THAN INDICATED

37

STORET RETRIEVAL DATE 74/11/26

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 343263          LS343263
43 19 00.0 073 55 30.0
SACANDAGA RIVER
36       15/LK LUZERNE
O/SACANDAGA RESERVOIR
CONKLINGVILLE DAM AT NORTH SHORE RD
11EPALES                  2111204
4                         0000 FEET  DEPTH
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DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/11/05	10 00		0.095	0.230	0.060	0.005K	0.00H
72/12/03	11 10		0.08H	0.200	0.029	0.005K	0.005K
73/01/05	09 40		0.240	0.290	0.028	0.005K	0.005K
73/02/02	09 10		0.315	0.340	0.041	0.005K	0.005K
73/03/06	18 58		0.390	0.230	0.052	0.005K	0.005K
73/04/10	08 13		0.300	0.120	0.022	0.005K	0.005K
73/04/16	08 40		0.350	2.000	0.054	0.005K	0.005K
73/05/06	11 00		0.399	2.200	0.071	0.005K	0.010
73/05/12	18 30		0.370	0.330	0.074	0.005K	0.005K
73/06/02	08 00		0.052	0.720	0.019	0.005K	0.010
73/07/02	19 55		0.097	0.460	0.075	0.005K	0.015
73/08/07	08 20		0.160	0.880	0.280	0.005K	0.005K
73/09/25	09 25		0.140	0.440	0.075	0.005K	0.010
73/10/04			0.049	0.580	0.042	0.009	0.020

K VALUE KNOWN TO BE LESS
THAN INDICATED

STORET RETRIEVAL DATE 74/11/26

3A32M1 LS3632M1
43 16 30.0 074 03 30.0
SAND CREEK
36 15/HARRISBURG
T/SACANDAGA RESERVOIR
NORTH SHORE RD BRIDGE IN WEST BAY
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/11/05	10 15		0.156	0.190	0.037	0.005K	0.009
72/12/03	08 10		0.273	0.210	0.014	0.005K	0.005K
73/01/05	07 50		0.340	0.180	0.017	0.005K	0.010
73/02/02	09 55		0.349	1.250	0.083	0.005K	0.045
73/03/05	19 30		0.374	0.200	0.052	0.005K	0.005K
73/04/10			0.147	0.180	0.063	0.005K	0.005K
73/04/16			0.138	1.760	0.052	0.005K	0.005K
73/05/06	10 00		0.160	0.480	0.023	0.005K	0.005K
73/05/12	19 35		0.168	2.100	0.100	0.005K	0.010
73/06/02	08 37		0.046	0.580	0.011	0.005K	0.010
73/07/02	19 35		0.048	0.420	0.066	0.005K	0.015
73/08/07	08 55		0.165	0.540	0.240	0.008	0.015
73/09/25	09 04		0.140	0.250	0.038	0.005K	0.010
73/10/04			0.080	0.420	0.033	0.005K	0.010

K VALUE KNOWN TO BE LESS THAN INDICATED

STORET RETRIEVAL DATE 74/11/26

3632J1 LS3632J1
43 18 30.0 074 00 00.0
PAUL CREEK
36 15/HARRISBURG
T/SACANDAGA RESERVOIR
NORTH SHORE RD BRIDGE IN DAY CENTER
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/11/05	10	23	0.097	0.180	0.044	0.005K	0.007
72/12/03	07	30	0.132	0.175	0.010	0.005K	0.005K
73/01/05	07	30	0.200	0.180	0.020	0.005K	0.010
73/02/02	10	10	0.240	0.290	0.030	0.005K	0.020
73/03/06	19	50	0.370	0.170	0.034	0.005K	0.005K
73/04/10	09	30	0.140	0.150	0.017	0.005K	0.005K
73/04/16	10	15	0.138	2.600	0.066	0.005K	0.010
73/05/06	09	45	0.056	1.320	0.127	0.005K	0.005K
73/05/12	19	45	0.078	3.400	0.250	0.005K	0.010
73/06/02	08	47	0.050	1.000	0.037	0.005K	0.010
73/07/02	20	15	0.066	0.560	0.160	0.005K	0.010
73/08/07	09	00	0.210	1.000	0.840	0.016	0.020
73/09/25	09	45	0.147	0.150	0.019	0.005K	0.005K
73/10/04			0.080	0.460	0.028	0.005K	0.010

K VALUE KNOWN TO BE LESS THAN INDICATED

STORET RETRIEVAL DATE 74/11/26

3632K1 LS3632K1
43 17 00.0 073 58 00.0
DALY CREEK
36 15/LK LUZERNE
T/SACANDAGA RESERVOIR
S SHORE RD BRIDGE SW OF OVERLOOK
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/11/05	09	40	0.063	0.290	0.044	0.005K	0.010
72/12/03	10	30	0.110	0.220	0.022	0.005K	0.005K
73/01/05	09	10	0.200	0.370	0.048	0.005K	0.005K
73/02/02	08	35	0.231	0.250	0.050	0.005K	0.005K
73/03/06	19	13	0.315	0.280	0.060	0.005K	0.005K
73/04/10	08	45	0.310	0.310	0.038	0.005K	0.005K
73/04/16	09	10	0.350	1.800	0.051	0.005K	0.005K
73/05/06	10	45	0.054	1.150	0.063	0.005K	0.005K
73/05/12	18	47	0.058	1.000	0.180	0.005K	0.010
73/06/02	08	15	0.040	0.210	0.006	0.005K	0.010
73/07/02	19	10	0.036	0.700	0.176	0.005K	0.020
73/08/07	08	35	0.081	0.460	0.147	0.005K	0.010
73/09/25	09	10	0.140	0.160	0.031	0.005K	0.015
73/10/04			0.080	0.370	0.033	0.005K	0.010

K VALUE KNOWN TO BE LESS THAN INDICATED

STORET RETRIEVAL DATE 74/11/26

3632L1 LS3632L1
43 03 30.0 073 13 30.0
KENYETTO CREEK
36 7.5/BROADALBIN
T/SACANDAGA RESERVOIR
ST HWY 30 BRIDGE N OF BROADALBIN
11EPALES 2111204
4 0000 FEET DEPTH

DATE FROM TO	TIME OF DAY	DEPTH FEET	00630 NO2&NO3 N-TOTAL MG/L	00625 TOT KJEL N MG/L	00610 NH3-N TOTAL MG/L	00671 PHOS-DIS ORTHO MG/L P	00665 PHOS-TOT MG/L P
72/11/05	16 20		0.182		0.063	0.011	0.054
72/12/03	15 30		0.260	0.350	0.032	0.010	0.029
73/01/05	15 25		0.320	0.320	0.044	0.011	0.033
73/02/03	13 30		0.360	0.900	0.138	0.019	0.070
73/03/03	13 50		0.450	1.300	0.260	0.037	0.065
73/04/07	16 05		0.140	1.260	0.033	0.005K	0.025
73/04/21	15 15		0.210	0.440	0.049	0.017	0.035
73/05/06	14 20		0.126	1.800	0.073	0.008	0.015
73/05/20	14 00		0.110	0.460	0.019	0.006	0.027
73/06/02	15 45		0.126	1.100	0.034	0.010	0.035
73/07/07	11 55		0.290	0.480	0.025	0.009	0.035
73/08/04			0.378	0.390	0.015	0.012	0.035
73/09/04			0.320	1.400	0.080	0.016	0.040
73/10/06	13 35		0.110	0.360	0.025	0.011	0.030

K VALUE KNOWN TO BE LESS THAN INDICATED